PRELIMINARY ASSESSMENT EQUIVALENT REPORT
DAYTON ELECTROPLATE, INC., SITE
DAYTON, MONTGOMERY COUNTY, OHIO
TDD: S05-9611-013
PAN: 6B1308SI

December 9, 1997

Prepared for:

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Site Assessment Section
77 West Jackson Boulevard
Chicago, Illinois 60604

Prepared by: Steven J. O'Hare for Christianne Ottinger, START Member — Date: 12/9/97

Reviewed by: Mary J. Ripp — Date: 12/9/97
M.J. Ripp, Assistant START Program Manager

Approved by: [signature] — Date: 12/9/97
Thomas Kouris, START Program Manager

ecology and environment, inc.
International Specialists in the Environment
33 North Dearborn Street, Chicago, Illinois 60602
Tel. 312/578-9243, Fax: 312/578-9345

Table of Contents

1. Introduction

The Ecology and Environment, Inc., (E & E) Superfund Technical Assessment and Response Team (START) has been tasked by the United States Environmental Protection Agency (U.S. EPA) to complete a Preliminary Assessment (PA) Equivalent Report for the Dayton Electroplate, Inc. (DEP), site under Technical Direction Document (TDD) S05-9611-013. The PA is based on information and data from the Removal Site Assessment Report, and information provided by E & E and U.S. EPA personnel involved in the removal action. Additional details on the removal site assessment and removal action, including photographs and validated analytical results, are available in the U.S. EPA Region 5 site file.

2. Site Description

The DEP site is an inactive electroplating facility located at 1030 Valley Street in Dayton, Montgomery County, Ohio. Coordinates for the site are latitude 39°46'43.44" North and longitude 84°09'45.72" West (Appendix A). The DEP site is located in an industrial/residential area within the northeast portion of Dayton, Ohio. The site occupies approximately 3 acres, and consists of two buildings covering approximately 60,000 square feet. The buildings occupy the majority of the site, with the remaining area covered by asphalt, concrete, or grass. Valley Street and residences border the site to the north; State Route 4 borders the south side of the site; Stanley Avenue is located approximately 500 feet east of the site; and commercial businesses border the site to the west and east. A locked fence presently surrounds the site, providing limited security to the facility (Appendix B).

Electroplating operations at the facility occurred from 1980 until April 1996. Various storage containers, ranging from 20-gallon drums to 5,000-gallon vats to roll-off boxes, contained acids, bases, and electroplating sludges and liquids, and were left on site following the end of operations. Subsurface contamination is suspected due to the potential release of chemicals stored in open and rusting containers.

Various recreational areas are located less than 0.25 mile from the site, and three schools are located within 0.5 mile of the site. The Mad River is located approximately 1,300 feet east of the buildings on site. In addition, two city drinking water intake wells are located within 2,200 feet of the site along the Mad River (Appendix C).

3. Previous Assessment and Removal Activities

According to documents submitted to the Ohio Environmental Protection Agency (OEPA) in 1985, plating lines at the facility contained zinc cyanide, nickel, and chrome electroplating solutions. On August 8, 1991, OEPA filed a complaint against Dayton Electroplate, Inc., for violations of the State of Ohio hazardous waste laws. In 1996, OEPA ordered closure of all hazardous waste management units, and provided for monetary penalties. Afterward, Dayton Electroplate, Inc. abandoned the facility. On September 12, 1996, OEPA requested assistance from U.S. EPA to conduct an emergency removal action at the abandoned DEP site (Appendix B).

A removal site assessment was conducted at the DEP site by E & E and the U.S. EPA removal section on October 11, 1996. The assessment included a site reconnaissance with photodocumentation and collection of 12 samples from drums and vats inside the buildings. Multiple drums were labeled by chemical or trade name as specific acids, basic materials, or other chemical products. Sampling to determine contaminant migration to soil and to groundwater was not conducted.

Analytical results indicated that the containers contained acids, bases, sodium cyanide, and isopropanol. One sample analyzed for total metals contained concentrations of 49, 43, and 10,000 milligrams per kilogram (mg/kg) of chromium, nickel, and zinc, respectively.

A U.S. EPA removal action was conducted at the site in 1997, with removal of all containers of hazardous materials stored on site (Appendix D). No plans for removal of subsurface contamination have been made.

4. Migration and Exposure Pathway Factors and Targets

This section describes the four migration and exposure pathways and targets associated with the DEP site. Section 4.1 discusses the groundwater migration pathway; Section 4.2 discusses the surface water migration pathway; Section 4.3 discusses the soil exposure pathway; and Section 4.4 discusses the air migration pathway.

4.1 Groundwater Migration Pathway

Groundwater is the source of drinking water for residents of Dayton. A total of 110 wells are located along the Mad River and the Great Miami River. The groundwater is sent to one of two water treatment facilities. The water from both facilities is blended and distributed to 440,000 residents. Eleven wells are located within 2 miles of the site. Two wells are located within 2,200 feet of the DEP site (Appendix C).

Subsurface contamination is suspected at the site due to improperly stored hazardous chemicals. Groundwater contamination has not been identified at the site. Due to the close proximity of Mad River to the site, groundwater is assumed to travel toward the river. The Ohio Department of Natural Resources description of the geology and hydrogeology of the Dayton area indicates that the subsurface consists of less than 30 feet of glacial drift followed by hard limestones and dense shales (Appendix E). The elevation at the site is 755 feet above mean sea level.

4.2 Surface Water Migration Pathway

The nearest potential point of entry (PPE) of runoff from the site to a surface water body is located east and approximately 300 feet downgradient of the site on the Mad River. The mean flow of the Mad River is 685 cubic feet per second (cfs) (Appendix F). The Mad River flows south 1.5 miles at which point it converges with the Great Miami River. The Great Miami River has a mean flow of 2,210 cfs (Appendix F). The Great Miami River continues to flow south beyond the Ohio

state line. Both water bodies support aquatic life and provide a habitat for fish.

4.3 Soil Exposure Pathway

Soil on the property has not been sampled. Potential contaminants associated with the soil underneath and around the site buildings are chromium, cyanide, nickel, nitric acid, sulfuric acid, zinc, and zinc cyanide (Appendix D). The choice of potential contaminants was determined on the basis of contaminants detected in the waste stored on site. Potential contamination outside of the building is suspected due to discolored concrete in the vicinity of drums stored within Building 1, which was documented in previous site inspections (Appendix B). In addition, partially empty drums were previously stored outside. Air monitoring using a Draeger pump and colorimetric tubes for hydrochloric acid was conducted for one drum that was observed releasing vapors from its bung opening. The colorimetric tube revealed that the vapors contained 8 parts per million of hydrochloric acid (Appendix B).

The DEP site is secured by a fence and locked gate surrounding the site. Approximately eight residences border the site to the north, within 500 feet. Approximately 10 residents live within 200 feet of the site (Appendix G). Approximately 9,454 persons live within 1 mile of the site (Appendix H). A population summary, based on 1990 U.S. Department of Commerce, Bureau of the Census data, is provided in Appendix H.

4.4 Air Migration Pathway

Comprehensive air particulate sampling has not occurred at the DEP site.

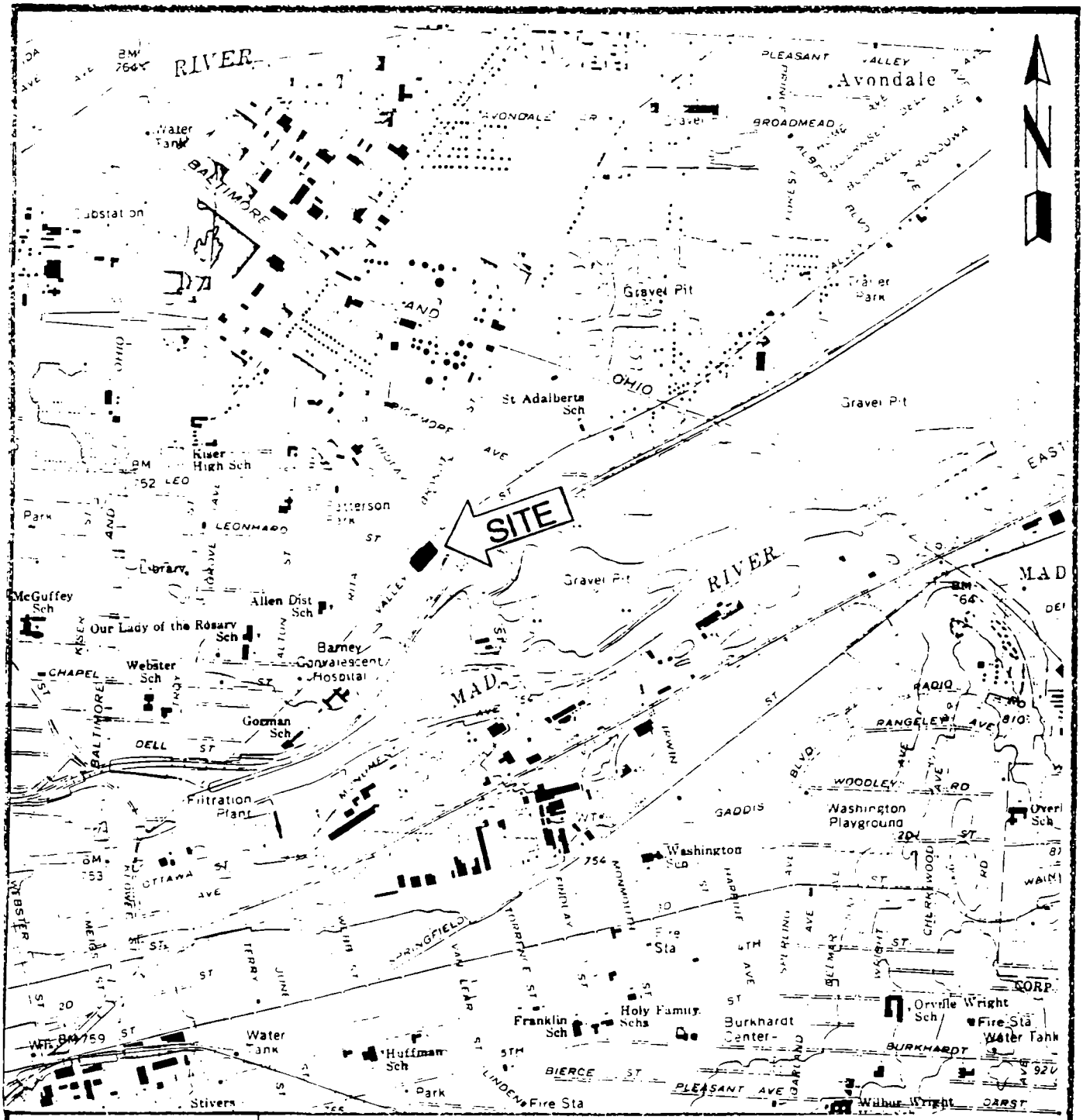
5. Summary

The removal action occurring at the site will result in the removal of all containers of hazardous waste. Analysis and sampling of site soil and groundwater has not occurred. In order to verify hazardous contamination of site soil and groundwater, soil and groundwater samples should be collected and analyzed.

Appendix A

Site Location Map

Source: Ecology and Environment,Inc., 1996, *Site Assessment Report for Dayton Electroplate, Inc., Dayton, Montgomery County, Ohio.*



Quadrangle Location

ecology and environment, Inc.
Superfund Technical Assessment and Response Team
Region V
6777 Engle Rd., Middleburg Hts., Ohio 44130

TITLE Site Location Map	FIGURE 1
SITE Dayton Electroplate, Inc. Site	SCALE 1: 24, 000
CITY Dayton STATE Ohio	PAN 6P1801SI
SOURCE USGS MAP, 7.5 Minute Series, Dayton North, OH Quadrangle	DATE 1965 REVISED 1981

Appendix B

E & E Site Assessment Report

SITE ASSESSMENT REPORT
FOR
THE DAYTON ELECTROPLATE, INC., SITE
DAYTON, MONTGOMERY COUNTY, OHIO
TDD: S05-9609-018
PAN: 6P1801SI
DOCUMENT CONTROL NUMBER: START-05-23-05019

December 19, 1996

Prepared for:

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
EMERGENCY RESPONSE BRANCH
77 West Jackson Boulevard
Chicago, Illinois 60604

Prepared by: Karen M Waldron Date: 12/19/96
Karen M. Waldron, START Project Manager

Reviewed and Approved by: Anne A. Bush Date: 12-19-96
Anne A. Busher, START Assistant Program Manager

ecology and environment, inc.
6777 ENGLE ROAD, CLEVELAND, OHIO 44130, TEL. (216) 243-3330
International Specialists in the Environment

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

2. SITE BACKGROUND

2.1 SITE DESCRIPTION

The DEP site is located at 1030 Valley Street, in Dayton, Montgomery County, Ohio (Figure 2-1). The geographical coordinates for the site are latitude North 39°46'43.44" and longitude West 84°09'45.72". The DEP site is located in an industrial/residential area within the northeast portion of Dayton, Ohio. The site occupies approximately three acres, and consists of two separate buildings covering approximately 60,000 square feet (Figure 2-2). Buildings 1 and 3 are actually part of the same structure. The buildings contain open manufacturing areas, four plating lines, process tanks, drum storage areas, office space, and a water treatment area. Valley Street and residences border the site on the north. State Route 4 borders the south side of the site, and Stanley Avenue lies approximately 500 feet east of the site. Commercial businesses are located immediately adjacent to the west and east borders of the site.

The two facility buildings occupy the majority of the site property, with the remaining area covered by asphalt, concrete, or grass. A locked fence presently surrounds the site, providing limited security to the facility.

2.2 SITE HISTORY

Dayton Electroplate, Inc., (DE) was formed in 1984 when the company acquired the assets of the Dayton Rust Proof Company. Dayton Rust Proof Company operated an electroplating business at the site from 1980 until 1984. From 1984 until April 1996, DE conducted electroplating operations, including nickel, chrome, zinc, and clear coating, at the Valley Street facility. According to documents submitted to the Ohio Environmental Protection Agency (OEPA), in 1985 plating lines at the facility contained a total of 43,905 gallons of zinc cyanide electroplating solutions; 10,945 gallons of nickel electroplating solutions; and 2,930 gallons of chrome electroplating solutions.

On August 8, 1991, OEPA filed a complaint against DE for violations of Ohio's hazardous waste laws which occurred at the facility during its operation. On April 16, 1993, OEPA conducted a follow-up hazardous waste inspection at the facility. OEPA

inspectors noted that the facility did not initiate a closure plan for illegal storage units including drum storage and roll-off box areas.

On February 14, 1994, OEPA, through the Ohio Attorney General's office, filed a complaint for injunctive relief and civil penalty against DE; Charles Borum, President; and Paul Borum, Vice-president; for hazardous waste violations. The complaint consisted of 11 counts addressing hazardous waste storage violations and failure to submit a closure plan.

On March 1, 1994, the facility submitted an Ohio State Emergency Response Commission (SERC) facility identification form. The facility identified the following chemicals used in daily operations: hydrofluoric acid, hydrogen chloride, nitric acid, sodium cyanide, and concentrated sulfuric acid.

On July 6, 1994, U.S. EPA Resource Conservation and Recovery Act (RCRA) Associate Division Director Norman R. Niedergang issued a Complaint, Findings of Violations, and Compliance Order (CAFO) to DE for RCRA violations. The U.S. EPA CAFO was finalized on March 17, 1995, and required DE to provide proper Land Disposal Regulations notification on all future hazardous waste shipments and required payment of a civil penalty of $5,400.

On May 4, 1995, a Consent Order was signed between the Ohio Assistant Attorney General's (OAAG) office and DE President Borum. The Consent Order required DE to perform closure of all hazardous waste management units at the DEP facility, and provided for a civil penalty.

On September 12, 1995, DE was notified by U.S. EPA of delinquency in meeting its penalty obligations specified in the 1994 U.S. EPA CAFO. On September 25, 1995, U.S. EPA received full payment of the $5,400 penalty amount specified in the 1994 U.S. EPA CAFO.

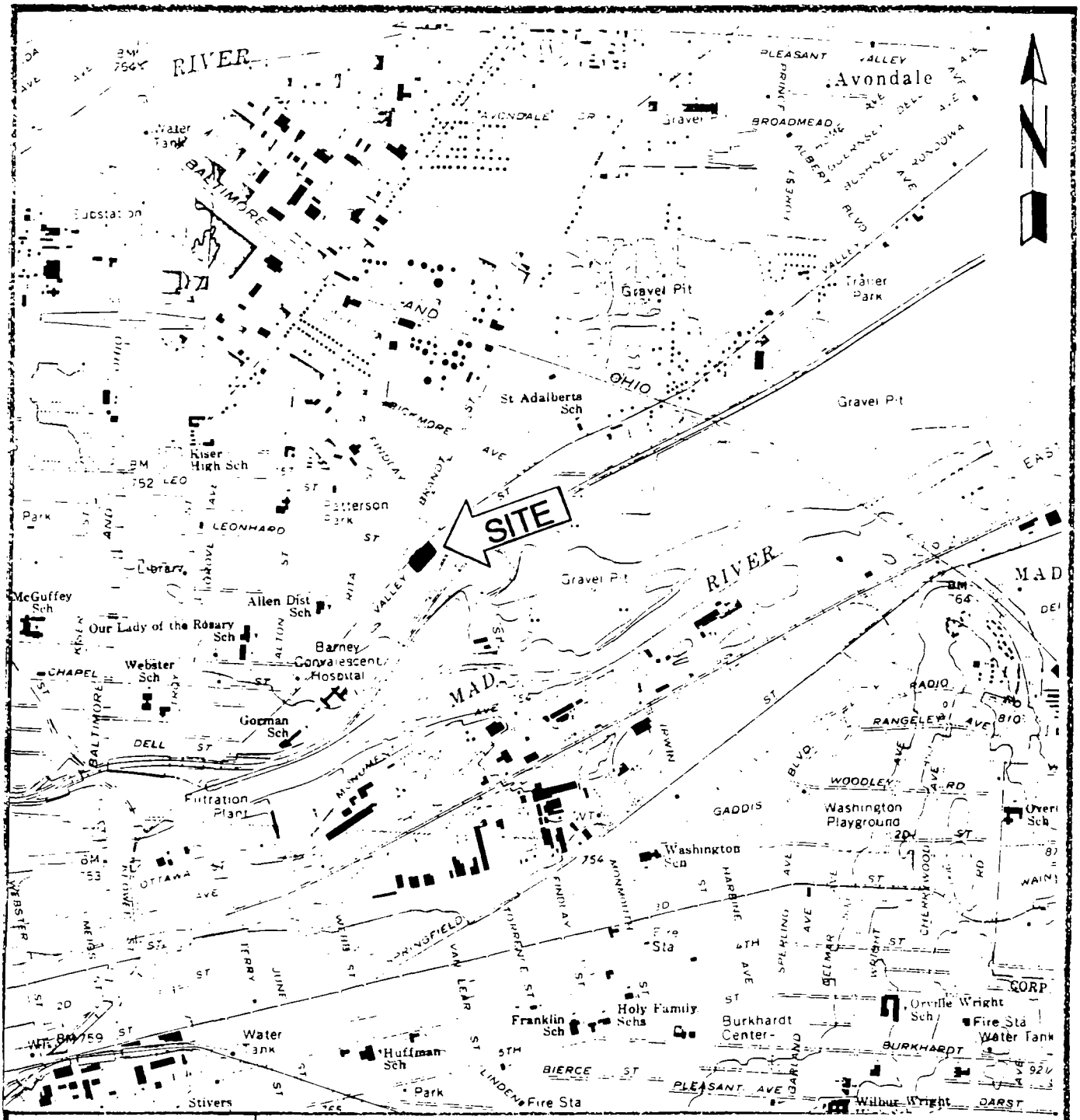
On November 15, 1995, OEPA Division of Hazardous Waste Management (DHWM) representative Elizabeth Rothschild conducted an inspection of the DEP site. The purpose of the inspection was to investigate a complaint alleging storage of hazardous waste at the facility. During the inspection, OEPA noted uncharacterized drums which reportedly contained wastes from nickel plating tanks at the site. Unlabelled drums containing cyanide filter pads were also observed at the facility. The OEPA inspector also noted that in addition to the drum violations, DE had failed to comply with the terms and conditions of the May 4, 1995, Consent Order.

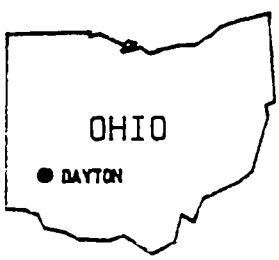
On February 29, 1996, a Judgement Entry was made by the OAAG's office regarding the May 4, 1995, Consent Order between the OAAG's office, DE, and DE President Borum. The Judgement Entry was required to document the lack of response to the May 4, 1995, Consent Order.

On August 27, 1996, OAAG Lori Massey notified DE and DE President Borum of violation of the May 4, 1995, Consent Order to perform closure and the February 29, 1996, Contempt Order. The OAAG's office indicated that the State of Ohio was aware at this time that DE was engaged in Chapter 7 bankruptcy proceedings.

On August 28, 1996, OEPA inspected the abandoned facility and observed acid vapors collecting near the ceiling of Plating Line 1 and a strong acidic odor permeating the buildings. OEPA also noted that the plating line was large and that process tanks appeared to be full and in poor condition.

On September 12, 1996, OEPA DHWM representative Michael Savage requested assistance from U.S. EPA Region V Emergency Response Branch to conduct an emergency removal action at the abandoned DEP site due to substantial endangerment to both the local population and the environment. OEPA noted that DE had filed for Chapter 7 Bankruptcy on April 12, 1996, and soon thereafter ceased operations at the site.

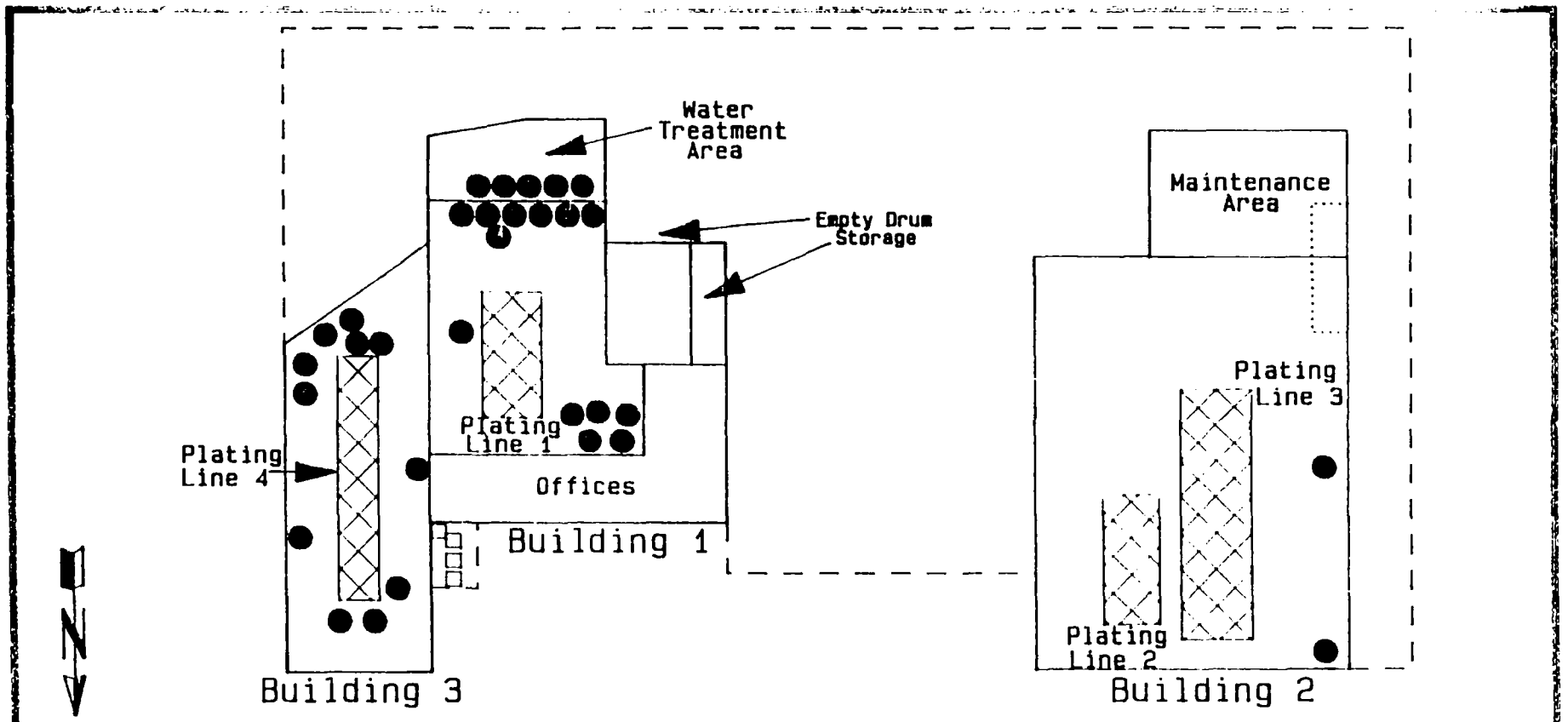




Quadrangle Location

ecology and environment, Inc.
Superfund Technical Assessment and Response Team
Region V
6777 Engle Rd., Middleburg Hts., Ohio 44130

TITLE Site Location Map	FIGURE 1
SITE Dayton Electroplate, Inc. Site	SCALE 1: 24, 000
CITY Dayton STATE Ohio	PAN 6P1801SI
SOURCE USGS MAP, 7.5 Minute Series, Dayton North, OH Quadrangle	DATE 1965 REVISED 1981



LEGEND

- Fence
- Plating Line
- Fenced Chemical Storage Area
- Transformers
- Storage Tanks

ecology & environment, inc.
Superfund Technical Assessment and Response Team
Region V
6777 Engle Road, Ste. N, Middleburg Heights, OH, 44130

TITLE: Site Features Map	FIGURE #: 2
SITE NAME: Dayton Electroplate, Inc.	PAN #: 6P1801SI
CITY: Dayton STATE: Ohio	SCALE: Not To Scale
SOURCE: Ecology & Environment, Inc.	DATE: 1996
	REVISED: 1996

3. SITE ASSESSMENT

3.1 SITE RECONNAISSANCE

On September 26, 1996, START Members (STARTMs) Karen Waldron, Mark Durno, and Jeff Kimble mobilized equipment to the site area to conduct site assessment activities on the following day. STARTMs were notified in the early evening that the U.S. EPA OSC had requested that the proposed site assessment activities be postponed due to a family emergency. STARTMs returned to the Cleveland START office on September 27, 1996.

On October 10, 1996, STARTMs Waldron, Kimble, and Cedric Gibson returned to the site area to complete the previously postponed site assessment activities. The site assessment at the DEP site was conducted on October 11, 1996. Also in attendance at the site assessment were U.S. EPA OSC Remninger, and OEPA Cessation of Regulated Operations representatives Mark Boden and David Jancuk.

U.S. EPA, START, and OEPA personnel completed an on-site reconnaissance of each of the buildings at the DEP facility in level B protection. START personnel conducted air monitoring activities during the reconnaissance inspections with an HNu photoionization detector (PID), a combustible gas indicator, a hydrogen cyanide (HCN) Monitox, a Draeger pump and colorimetric monitoring tubes for hydrochloric acid, and a radiation meter. U.S. EPA and START personnel also conducted a drum and vat inventory and video and photo documentation of site conditions during the site reconnaissance inspections. OEPA personnel completed an inventory of all drums and containers of potentially useable products at the facility. Photographs of the site are included as Appendix A of this report.

3.2 SITE OBSERVATIONS

The site consists of two main structures, both of which were secured at the time of the site assessment. A fence and locked gates surround the site. Access to the facility was provided to the OSC by the bankruptcy trustee for the facility. Areas of the site not covered by the site buildings are concrete- or asphalt-covered parking areas or are grass-covered. The exteriors of both of the site buildings appeared to be structurally sound, although portions of the brick wall along the north side of Building 1 have fallen down,

creating piles of bricks which are reportedly periodically cleaned up by representatives of the bankruptcy trustee for the site.

A small area adjacent to Buildings 1 and 3 is enclosed by a separate chain-link fence. Three transformers were observed on a concrete pad in this fenced area. A fourth, smaller transformer was observed on an electrical pole, also within the fenced area. It is not known whether oils in any of the four transformers contain polychlorinated biphenyls.

Empty and partially empty drums were observed stored outside, at the south side of Building 1. Acid fumes were observed releasing from the bung opening of one of the drums, which was labelled as containing hydrochloric acid. The drum contained several inches of liquid residues. Air monitoring with the Draeger pump and colorimetric monitoring tubes for hydrochloric acid indicated the release of approximately 8 parts per million (ppm) of hydrochloric acid vapors.

Building 1: Building 1 is located near the center of the site property and is contained within the same structure as Building 3 (refer to Figure 3-1 for Building 1 Detail Map). It consists of a number of rooms, and appears to have contained the offices and support areas associated with the business during its operation.

Entry to Building 1 was obtained through a walk-in door along the west side of the building. This area consisted of several smaller rooms adjacent to a central hallway. One of these rooms was utilized for storage of empty drums. Approximately 21 empty 55-gallon drums, seven empty 30-gallon drums, and one empty 20-gallon drum were observed in this area. Empty drums in this storage area were stacked two high in some locations.

The majority of Building 1 is occupied by a single large room, which houses Plating Line 1. Plating Line 1 consists of 19 separate vats, ranging in capacity from 200 gallons to 1,200 gallons. Most of the vats in this plating line appeared to be at least half full of liquid and solid electroplating wastes. Contents of several of the vats were field-tested with pH paper, and indicated pH values ranging from 1 to 14 Standard Units (S.U.).

Five large closed, fiberglass-wrapped tanks were observed in the northwest corner of the main room in Building 1. Contents of the storage tanks are unknown, although the tanks are assumed to be full. Access to the tops of each of the storage tanks requires a ladder, which was unavailable at the time of the site assessment. Each tank has an estimated capacity of 3,500 gallons. One of the tanks was labelled as "Alkali Holding." Standing liquids, possibly rain water or leakage from plating vats or the storage tanks themselves, was observed around the base of these storage tanks and around the north end of Plating Line 1. A reading of approximately 280 ppm above background levels was obtained on the PID during the site reconnaissance of this area. An additional 550-gallon capacity closed,

fiberglass-wrapped storage tank was observed at the southeast corner of Plating Line 1. It is assumed that this tank is also full.

Seven additional smaller storage tanks, with capacities ranging from 375 to 550 gallons, were observed at the south end of the main room in Building 1. These tanks appeared to be constructed of polyethylene (poly) plastic and were open to the atmosphere. Each tank contained a power-operated mixer, and tanks appeared to be connected via piping. One of these seven storage tanks was observed to be approximately 75% full, and the remaining six tanks were observed to be approximately 25% full, of unknown liquids.

A separate room, located at the south end of Building 1, appeared to have been utilized as a water treatment area for wastewater pretreatment prior to sewer discharge. This room contained an additional five large, open-top, fiberglass-wrapped storage tanks. Each of these tanks had an estimated capacity of 3,000 gallons, and were observed to be approximately 80% full. In addition, a 20-cubic-yard roll-off box, which appeared to be full of dried electroplating sludges, was observed in the southwest corner of the water treatment area. A large vat was also located in the southeast corner of this room. The 2,150-gallon capacity vat was nearly full of an unknown liquid.

Approximately 70 full 55-gallon drums were observed in Building 1 along the west wall of the main room. Drums of unused products, stacked two drums high, were stored on pallets along the wall. The drums were staged by chemical name, based on small signs located on the wall. However, drums of acids, such as nitric (2 drums), sulfuric (8 drums), and hydrochloric (20 drums), were observed stored adjacent to drums of basic materials, such as sodium hydroxide (16 drums) and sodium hypochlorite (12 drums). A list of drums and containers inventoried by START during the site assessment, separated by building and area, is included as Appendix B.

An additional ten full 55-gallon drums of sulfuric acid (4), sodium hydroxide (4), and sodium hypochlorite (2) were observed at the southeast corner of the main room, adjacent to the water treatment area. The concrete floor in the vicinity of these drums was observed to be stained yellow in several locations. Labels from other containers observed in Building 1 indicated the presence of the following products: "Zincrolyte," "Enthobrite," and "SoakClean," as well as several unknown materials.

Building 3: Building 3 is contained within the same overall structure as Building 1. Access to Building 3 can be obtained through the main room of Building 1, or through three large overhead garage doors located in the northwest corner of the building (refer to Figure 3-2 for Building 3 Detail Map). These doors were locked at the time of the site assessment.

Building 3 contains Plating Line 4, miscellaneous drums and storage tanks, and an overhead drying rack mechanism.

Plating Line 4 consists of 23 separate vats, ranging in capacity from 1,250 gallons to 19,000 gallons. Most of the vats were observed to be full or nearly full of liquids and sludges. However, a group of five of these vats, located at the southeast end of the plating line, were empty. The contents of a number of the vats were tested with pH paper and indicated pH values ranging from 1 to 14 S.U. The contents of the largest of the vats in Plating Line 4 was field-tested with an EM Quant cyanide test kit and was found to contain high levels of cyanide. This vat was located within 10 to 15 feet of vats containing low pH materials.

A total of 11 storage tanks were observed in Building 3. Tank capacities ranged from 1,000 to 10,000 gallons. All of the storage tanks were closed to the atmosphere and the interiors were unable to be accessed. Therefore, the tanks were all estimated to be 75% full. The contents of the tanks are unknown, but are assumed to be liquids. Eight 55-gallon drums and nine 5-gallon containers of unknown contents, were also observed in Building 3.

Building 2: Building 2 contains Plating Lines 2 and 3 (refer to Figure 3-3 for Building 2 Detail Map). Plating Line 2 consists of 16 separate vats, ranging in size from approximately 1,000 to 5,000 gallons in capacity. All of the vats in Plating Line 2 were empty at the time of the site assessment.

Plating Line 3 contains 25 separate vats, ranging in capacity from 1,000 to 10,000 gallons. Approximately half of the vats in this plating line were empty at the time of the site assessment. The remaining vats were approximately 75% full of liquids and sludges. The large, horseshoe-shaped plating vat was empty of electroplating materials at the time of the site assessment, but contained several large portable kerosene heaters. Ten full 55-gallon drums labelled as containing kerosene were observed adjacent to the west side of this vat.

A large steel storage tank was observed in the northwest corner of Building 2. The tank has an estimated capacity of 10,000 gallons, but was observed to be empty at the time of the site assessment. A second storage tank, with an estimated capacity of 5,000 gallons, was observed along the west side of Building 2. The contents of this tank are unknown, although it is assumed to be half full.

A generator room is located along the west wall of Building 2, between the two storage tanks. One 30-gallon and two 20-gallon drums of sodium cyanide and one 30-gallon and two 20-gallon drums of zinc cyanide were observed in this room.

A group of 33 55-gallon drums were observed along the west wall of Building 2, between the generator room and the 10,000-gallon storage tank. The drums were labelled with "Amphoteric 2150RR." Additional label information indicated these materials were cleaning compounds which contained hydrofluoric acid. The contents of one of these drums was field-tested with pH paper and indicated a pH of 1 S.U. Drums in this area were stored on the floor and on an overhead storage area against the wall. A complete inventory of this area was not possible due to the lack of a ladder required to access the overhead storage shelf. These drums are located within 10 to 15 feet of the drums of sodium and zinc cyanides.

A bathroom area is located in the northeast corner of Building 2. Several 55-gallon drums of unknown contents were observed in this room. In addition, a red liquid, which may have originated from one of the drums, was observed in one of the toilets in the bathroom.

The south end of Building 2 contains a separate room dedicated to the maintenance department of the facility. This room was filled with spare parts and equipment. Pressurized cylinders of acetylene, oxygen, and argon gas, on a portable welding cart, were observed in this area. In addition, several drums and containers of lubricants were also observed scattered throughout the maintenance area.

A fenced storage area is located in the southwest corner of the main room of Building 2 and the northwest corner of the maintenance area. The portion of the locked, fenced area which lies in the maintenance area contained miscellaneous tools and spare parts. The portion which lies in the main room of Building 2 contained a number of drums and small containers of chemicals such as chromic acid, phosphoric acid, and isopropanol. Drums and containers were stacked on top of each other and on shelves within this area.

3.3 SAMPLING ACTIVITIES

After completion of the site reconnaissance in each building area, START and the U.S. EPA OSC discussed their observations, as well as the proposed sampling scheme. The START was requested to collect samples from six drums and six vats on site.

Drum and vat sampling was conducted by START in level B protection, with continuous monitoring of the breathing zone with the PID and HCN Monitox. Drum and vat samples were collected with dedicated 1/2-inch diameter glass drum thieves, poured directly out of the drum or container, or collected with dedicated plastic scoops. Sample aliquots were placed into 16-ounce glass bottles, which were subsequently sealed and labelled. Outer sampling gloves were changed between sampling points. No readings above background levels were detected on the PID or HCN Monitox during drum and vat sampling activities.

Drum sample D1 was a clear, colorless liquid collected from a full 55-gallon poly drum labelled as containing sulfuric acid, "66 Baume." Drum sample D2 was also a clear, colorless liquid. It was collected from a full 55-gallon poly drum labelled as containing hydrochloric acid. Sample D3 was a clear, colorless liquid collected from a full 55-gallon poly drum labelled as containing 50% sodium hydroxide. Drum sample D4 was a clear, light yellow liquid obtained from a full 55-gallon poly drum labelled as containing sodium hypochlorite. All four of these drums were located in a storage area along the west wall of Plating Line 1 in Building 1 (refer to Figure 3-4 for Building 1 Sample Locations).

Vat samples V5, V6, and V7 were collected from vats in Plating Line 1 in Building 1. Sample V5 was a clear, yellow liquid which indicated a pH of 14 S.U. when tested with pH paper. Vat sample V6 was a clear, light green liquid which indicated a pH of 1 S.U. when tested with pH paper. Vat sample V7 was a green and brown crystalline solid.

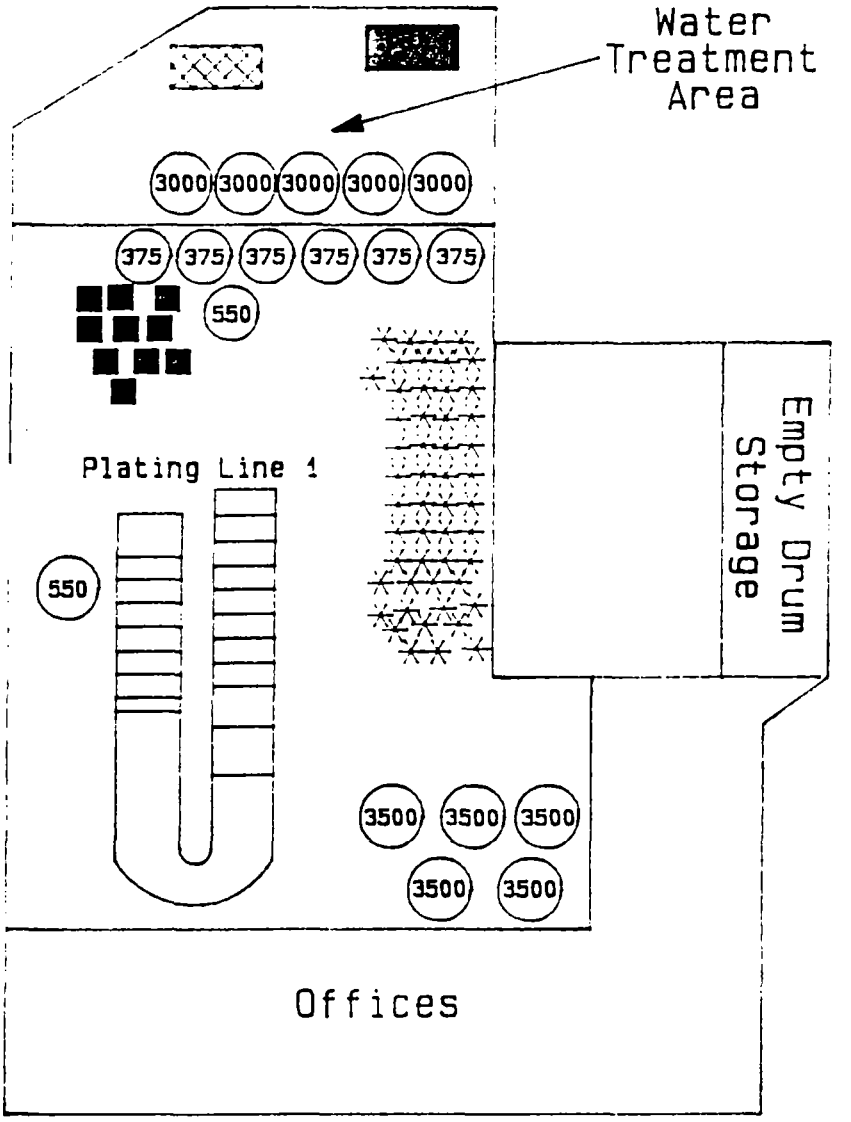
Vat samples V8 and V9 were collected from plating vats from Plating Line 4 in Building 3 (refer to Figure 3-5 for Building 3 Sample Locations). Sample V8 was a clear, light yellow liquid which tested positive for cyanide content when field-tested with an EM Quant cyanide test kit. Vat sample V9 was a clear, light green liquid which indicated a pH of 1 S.U. when tested with pH paper.

The remaining three samples were collected from Building 2 (refer to Figure 3-6 for Building 2 Sample Locations). Sample D10 was a clear, colorless liquid obtained from a 1-gallon metal container labelled as containing isopropanol. This container was located in the fenced storage area along the west wall of Building 2. Drum sample D11 was a white, briquette-shaped solid obtained from a full 30-gallon metal drum labelled as containing sodium cyanide. Vat sample V12 was a clear, green liquid which indicated a pH of 1 S.U. when tested with pH paper.

Upon completion of the sampling actions, samples were decontaminated, labelled, and packaged according to standard E & E protocols. START personnel conducted dry decontamination activities and all potentially contaminated personal protective clothing was bagged and left inside Building 1, as directed by the OSC. U.S. EPA, OEPA, and START personnel departed the site at 1430 hours.

On October 15, 1996, at 0847 hours, START™ Durno relinquished the 12 samples to Andrea Thayer of BEC Laboratories, Inc. (BEC), in Toledo, Ohio. The chain-of-custody form was completed at this time. Analysis of eight samples for pH, Method 9040; two samples for total and reactive cyanide, Methods 9010 and Solid Waste 846 7.3.3.2, respectively; one sample for total chromium, nickel, and zinc, Method 6010/7000; one sample for flash point,

Method 1020; two samples for chloride, Method 9252; and one sample for sulfate, Method 9038; with a 14-day verbal turnaround time was requested under TDD S05-9610-805.



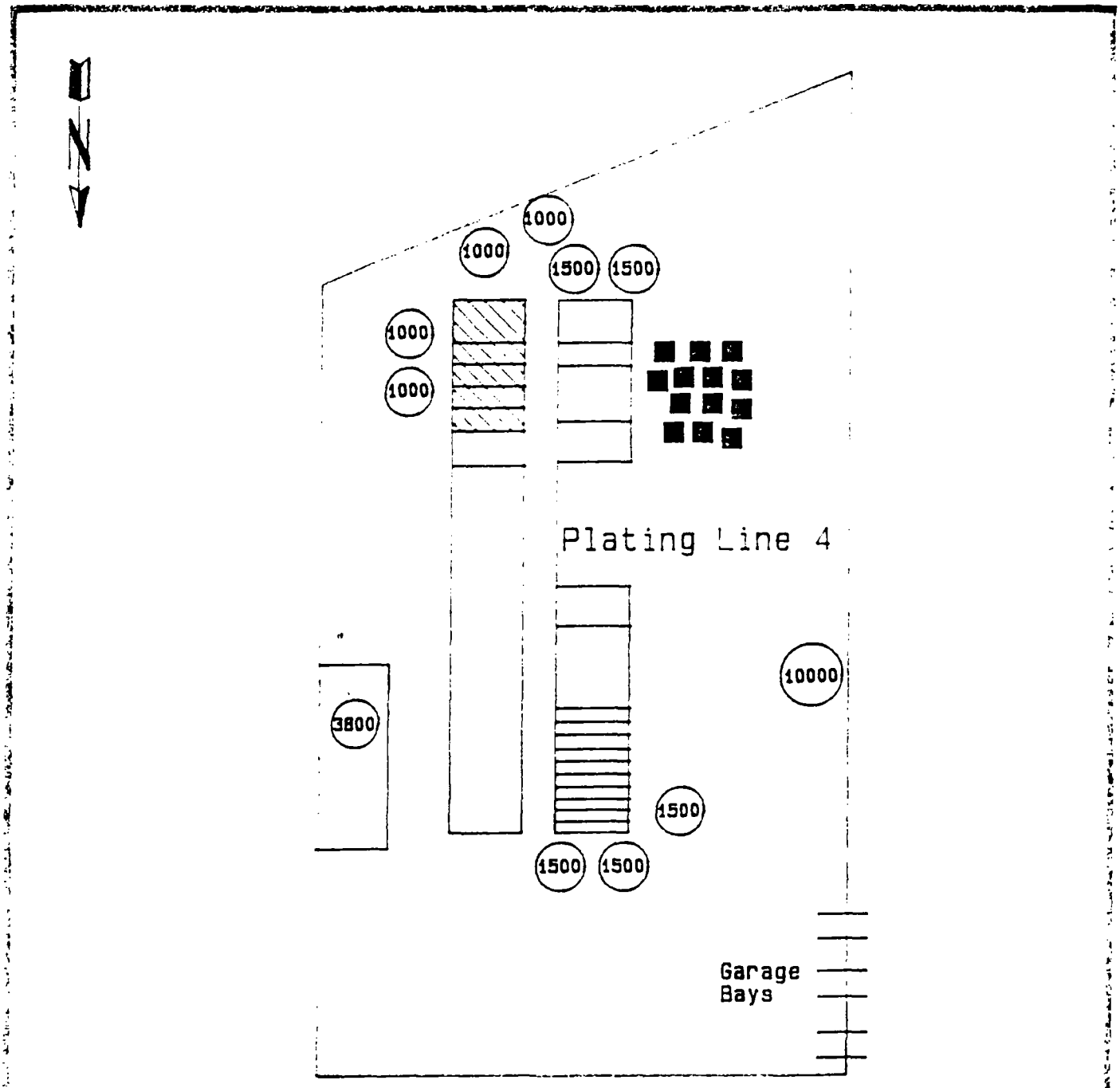
Building 1

LEGEND

(375)	Storage Tank Capacity in Gallons
■	55-Gallon Drums
✳	55-Gallon Drums Unused Product
▨	Liquid-Filled Vat
■	Sludge-Filled Rolloff Box

ecology and environment, inc.
Superfund Technical Assessment and Response Team
Region V
6777 Engle Rd., Middleburg Hts., Ohio 44130

TITLE: Building 1 Detail Map	FIGURE: 3-1
SITE: Dayton Electroplate, Inc.	SCALE: Not To Scale
CITY: Dayton STATE: Ohio	PAN: 6P1801SI
SOURCE: Ecology and Environment Inc.	DATE: 1996
	REVISED:

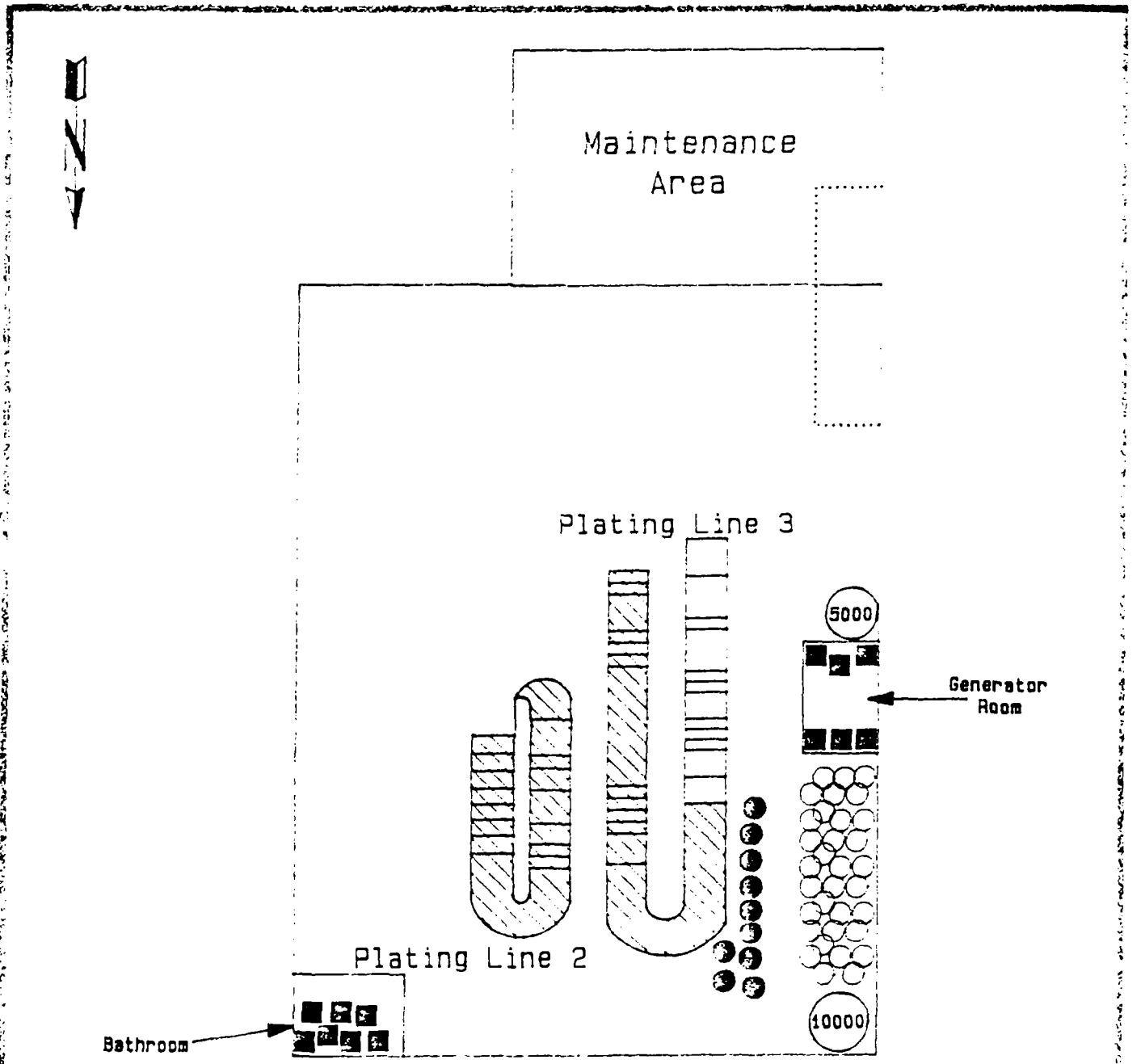


Building 3

LEGEND	
3800	Storage Tank Capacity in Gallons
■	55-Gallon Drums and Containers
▨	Empty Vats

ecology and environment, inc.
Superfund Technical Assessment and Response Team
Region V
6777 Engle Rd., Middleburg Hts., Ohio 44130

TITLE: Building 3 Detail Map	FIGURE: 3
SITE: Dayton Electroplate, Inc.	SCALE: Not To Scale
CITY: Dayton STATE: Ohio	PAN: 6P1801SI
SOURCE: Ecology and Environment Inc.	DATE: 1996
	REVISED:

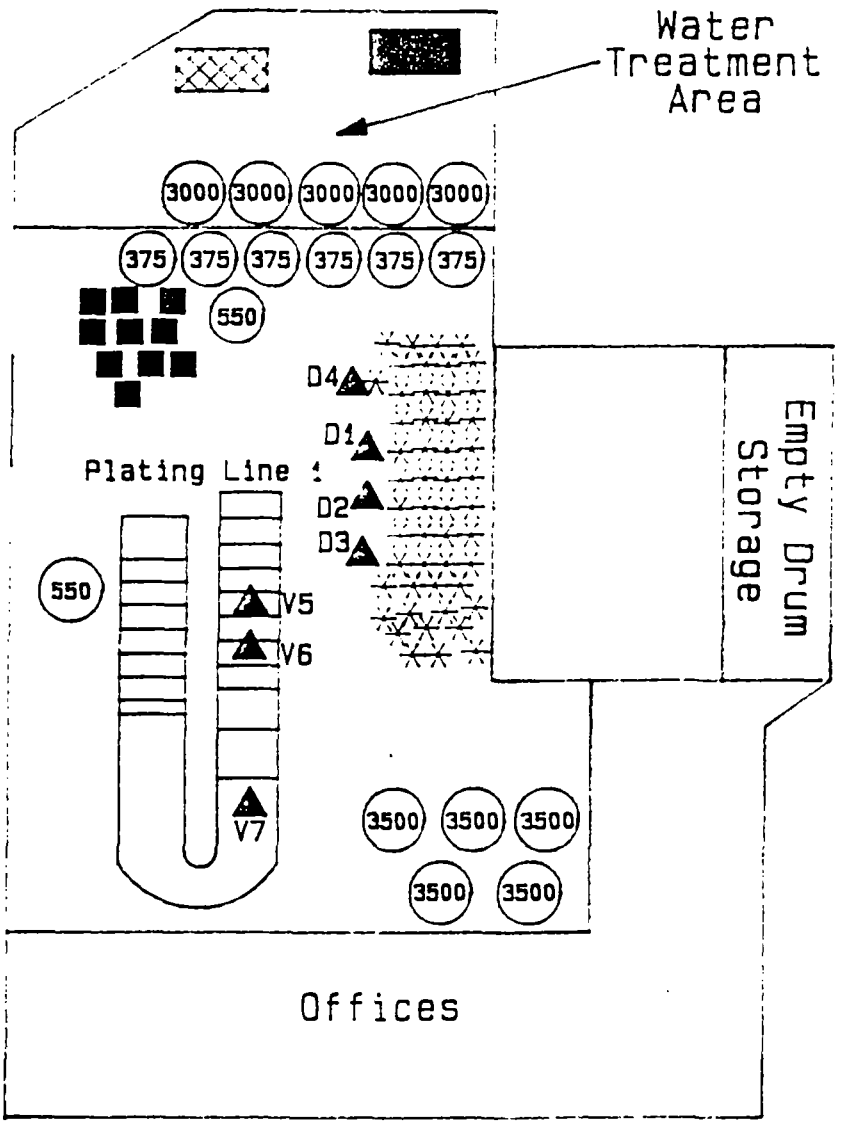


LEGEND

- 5000 — Storage Tank Capacity in Gallons
- ..... — Fenced Chemical Storage Area
- ● — Kerosene 55-Gallon Drums
- ○ — Hydroflouric Acid 55-Gallon Drums
- ■ — Miscellaneous Drums
- ▨ — Empty Vats

ecology and environment, inc.
Superfund Technical Assessment and Response Team
Region V
6777 Engle Rd., Middleburg Hts., Ohio 44130

TITLE: Building 2 Detail Map	FIGURE: 3-3
SITE: Dayton Electroplate, Inc.	SCALE: Not To Scale
CITY: Dayton STATE: Ohio	PAN: 6P1801SI
SOURCE: Ecology and Environment Inc.	DATE: 1996
	REVISED:



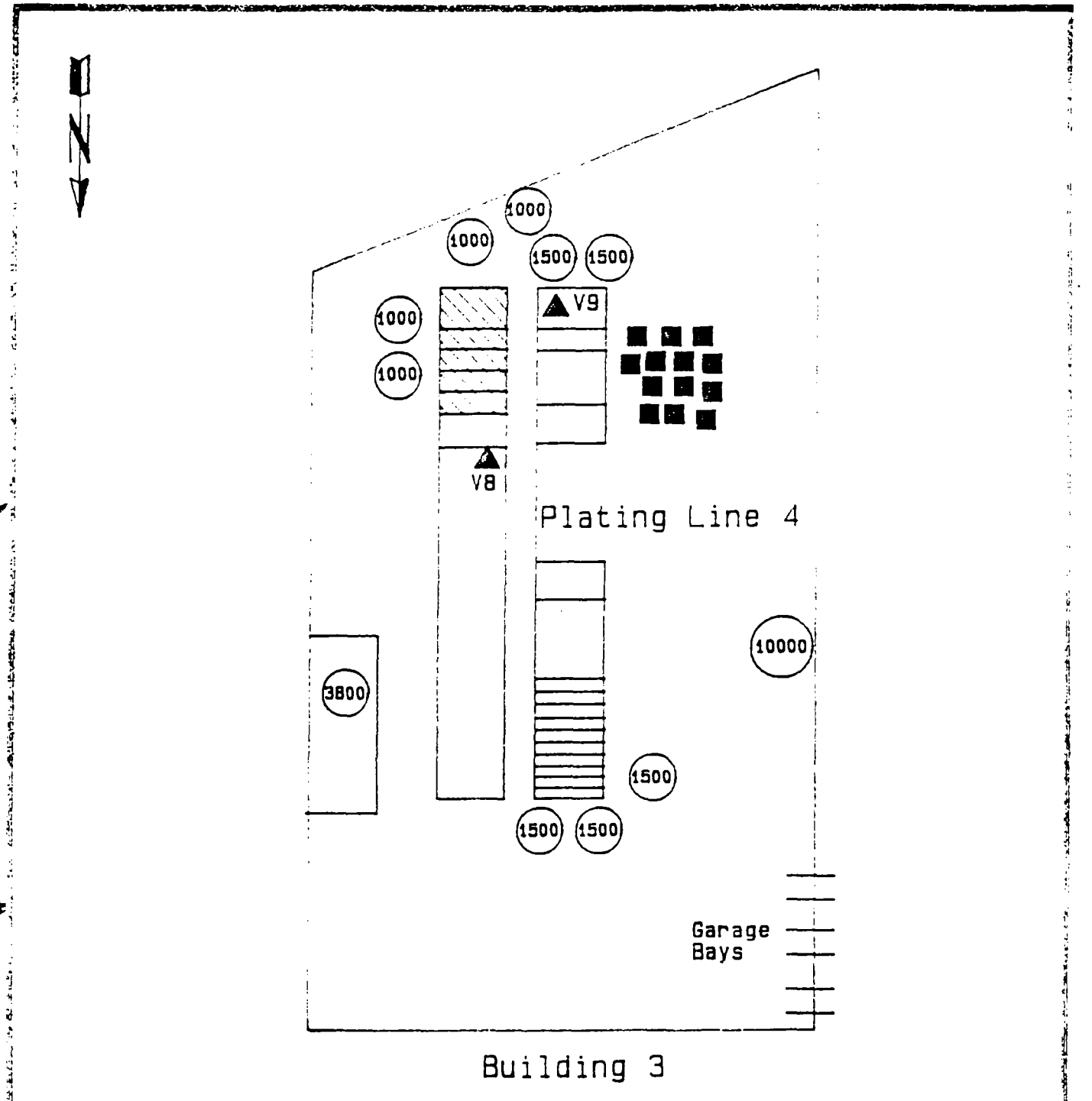
Building 1

LEGEND

- 500 — Storage Tank Capacity in Gallons
- ▲ — Drum or Vat Sample Location
- ■ — 55-Gallon Drums
- ✳ — 55-Gallon Drums Unused Product
- Liquid-Filled Vat
- Sludge-Filled Rolloff Box

ecology and environment, inc.
Superfund Technical Assessment and Response Team
Region V
6777 Engle Rd., Middleburg Hts., Ohio 44130

TITLE: Building 1 Sample Location Map	FIGURE: 3
SITE: Dayton Electroplate, Inc.	SCALE: Not To Scale
CITY: Dayton STATE: Ohio	PAN: 6P1801SI
SOURCE: Ecology and Environment Inc.	DATE: 1996
	REVISED:



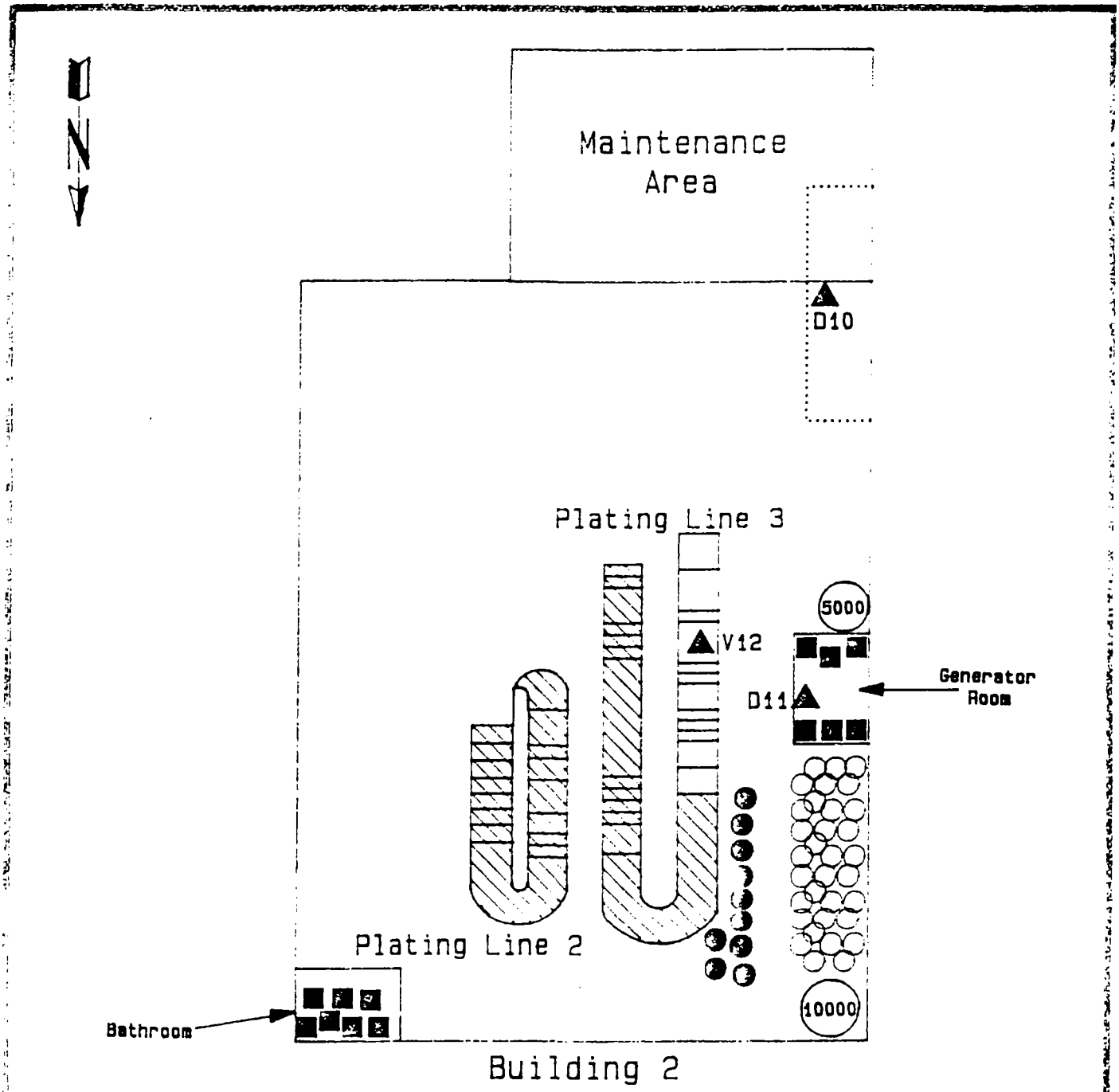
Building 3

LEGEND

3800	Storage Tank Capacity in Gallons
■	55-Gallon Drums and Containers
▨	Empty Vats
▲	Vat Sample Location

ecology and environment, inc.
Superfund Technical Assessment and Response Team
Region V
6777 Engle Rd., Middleburg Hts., Ohio 44130

TITLE: Building 3 Sample Location Map	FIGURE: 5
SITE: Dayton Electroplate, Inc.	SCALE: Not To Scale
CITY: Dayton STATE: Ohio	PAN: 6P1801SI
SOURCE: Ecology and Environment Inc.	DATE: 1996
	REVISED:



LEGEND

- 5000 — Storage Tank Capacity in Gallons
- ..... — Fenced Chemical Storage Area
- ● — Kerosene 55-Gallon Drums
- ○ — Hydrofluoric Acid 55-Gallon Drums
- ▲ — Sample Location
- ■ — Miscellaneous Drums
- ▨ — Empty Vats

ecology and environment, inc.
Superfund Technical Assessment and Response Team
Region V
6777 Engle Rd., Middleburg Hts., Ohio 44130

TITLE: Building 2 Sample Location Map	FIGURE: 4
SITE: Dayton Electroplate, Inc.	SCALE: Not To Scale
CITY: Dayton STATE: Ohio	PAN: 6P1801SI
SOURCE: Ecology and Environment Inc.	DATE: 1996
	REVISED:

4. ANALYTICAL RESULTS

Analytical results from analyses conducted by BEC revealed the presence of high and low pH materials, low flash point materials, elevated zinc concentrations, and high concentrations of total and reactive cyanides. Summaries of the analytical results from BEC are included as Tables 4-1 and 4-2, and the analytical data review memorandums for these results are included as Appendix C.

Samples D1, D2, V6, V9, and V12 were analyzed for pH. All five samples revealed pH values below 1 S.U. Samples D3, D4, and V5 were also analyzed for pH and revealed pH values of greater than 13 S.U., 11.67 S.U., and 12.67 S.U., respectively. Sample D1 was also analyzed for total sulfate and indicated a sulfate concentration of 820,000 milligrams per liter (mg/L). Samples D2 and D4 were also analyzed for total chloride, and indicated chloride concentrations of 380,000 mg/L and 170,000 mg/L, respectively.

Sample V7 was analyzed for total chromium, nickel, and zinc concentrations. Analytical results for this sample revealed a total chromium concentration of 49 milligrams per kilogram (mg/kg); a total nickel concentration of 43 mg/kg; and a total zinc concentration of 10,000 mg/kg. Sample D10 was analyzed for flash point and revealed a flash point of less than 74 degrees Fahrenheit (°F).

Samples V8 and D11 were analyzed for total and reactive cyanide. Total cyanide concentrations were 6,500 mg/L and 53,000 mg/kg for samples V8 and D11, respectively. Reactive cyanide concentrations for samples V8 and D11 were less than 0.1 mg/L and 470 mg/kg, respectively.

Table 1

SUMMARY OF DRUM AND CONTAINER ANALYTICAL RESULTS
DAYTON ELECTROPLATE, INC.
DAYTON, OHIO
OCTOBER 11, 1996

Sample Number	Matrix	Label	Parameter					
			pH	Sulfate	Chloride	Total Cyanide	Reactive Cyanide	Flash Point
D1	Liquid	Sulfuric Acid	<1	820,000	*	*	*	*
D2	Liquid	Hydrochloric Acid	<1	*	380,000	*	*	*
D3	Liquid	Sodium Hydroxide	>13	*	*	*	*	*
D4	Liquid	Sodium Hypochlorite	11.67	*	170,000	*	*	*
D10	Liquid	Isopropanol	*	*	*	*	*	<74
D11	Solid	Sodium Cyanide	*	*	*	53,000	470	*

Key:

< = Less than.
> = Greater than.
* = Not Analyzed.
pH reported in Standard Units (S.U.).
Sulfate and chloride reported in milligrams per liter (mg/L).
Total and reactive cyanide reported in milligrams per kilogram (mg/kg).
Flash point reported in degrees Fahrenheit (°F).

Source: BEC Laboratories, Inc., Toledo, Ohio, TDD S05-9610-805.

Table 2

SUMMARY OF VAT ANALYTICAL RESULTS
DAYTON ELECTROPLATE, INC.
DAYTON, OHIO
OCTOBER 11, 1996

Sample Number	Matrix	Parameter						
		pH	Total Chromium	Total Nickel	Total Zinc	Total Cyanide	Reactive Cyanide	Flash Point
V5	Liquid	12.67	*	*	*	*	*	*
V6	Liquid	<1	*	*	*	*	*	*
V7	Solid	*	49	43	10,000	*	*	*
V8	Liquid	*	*	*	*	6,500	<0.1	*
V9	Liquid	<1	*	*	*	*	*	*
V12	Liquid	<1	*	*	*	*	*	*

Key:

< = Less than.
* = Not Analyzed.
pH reported in Standard Units (S.U.).
Total chromium, nickel, and zinc reported in milligrams per kilogram (mg/kg).
Total and reactive cyanide reported in milligrams per liter (mg/L).

Source: BEC Laboratories, Inc., Toledo, Ohio, TDD S05-9610-805.

5. DISCUSSION OF POTENTIAL THREATS

Paragraph (b) (2) of Part 300.415 of the National Contingency Plan (NCP) lists factors to be considered when determining the appropriateness of a potential removal action at a site. The following discussion presents a summary of those factors which are applicable to the DEP site.

- **Actual or potential exposure of nearby human populations, animals, or the food chain to hazardous substances or pollutants or contaminants.** Low pH (less than 1 S.U.) and high pH (greater than 12.5 S.U.) materials were documented as present at the DEP site. As defined in 40 Code of Federal Regulations (CFR) 261.22, these materials are considered to be hazardous based on the RCRA characteristic of corrosivity, which states: "A solid waste exhibits the characteristic of corrosivity if a representative sample...is aqueous and has a pH less than or equal to 2 or greater than or equal to 12.5 as determined by a pH meter..." Drum and vat samples collected at the DEP site revealed analytical results which indicated the presence of both high pH (greater than 13 S.U.) and low pH (less than 1 S.U.) materials.

  Based on drum labels and analytical results, drums at the site are documented to contain hydrofluoric, sulfuric, and hydrochloric acids as well as high pH cleaning solutions, sodium hydroxide, and sodium hypochlorite. Hydrofluoric acid is known as the strongest acid due to its ability to etch and corrode glass. Due to this characteristic, this material cannot be sampled and laboratory analyzed for pH. However, common chemistry books list the pH of hydrofluoric acid as less than 1 S.U.

  Plating wastes contained in vats at the DEP site are also considered to be hazardous, as defined in 40 CFR 261.31, which defines F007 and F008 listed wastes as plating bath residues and spent plating bath solutions from plating operations utilizing cyanides. In addition, analytical results from START-collected samples revealed the presence of reactive cyanide at a concentration of 470 mg/L. As a result, this waste is considered to be hazardous based on the RCRA characteristic of reactivity, as defined in 40 CFR 261.23.

  Samples collected at the DEP site revealed the presence of cyanides and low pH materials in close proximity. If these incompatible materials were mixed inadvertently or intentionally, toxic hydrogen cyanide gas could be created and released to the surrounding populations. Private residences are located directly across Valley Street from the site.

- **Hazardous substances or pollutants or contaminants in drums, barrels, tanks, or other bulk storage containers, that may pose a threat of release.** Drums and containers of corrosive and cyanide-bearing wastes were observed throughout the DEP facility. Bulk storage tanks and plating vats in Building 1 were observed to be surrounded by

standing water indicating potential tank or roof leakage. Plating vats range in volume from 200 to 19,000 gallons, and many of these vats are already at or near capacity. Additional roof leakage as the site buildings deteriorate could cause these plating solutions to be released, and could result in the inadvertent mixing of incompatible wastes.

OEPA inspectors also observed acid fumes collecting near the roof in Building 1 during their August 28, 1996, inspection of the facility. Analytical results from the contents of plating vats in the DEP facility have indicated the presence of high and low pH materials. Open vats and storage tanks are present in Building 1, and throughout the facility, and may release hazardous vapors into the air. If the integrity of the roof is compromised in any way, these hazardous vapors may be released into the surrounding environment.

- Threat of fire or explosion. Laboratory analysis of drum samples collected at the DEP site revealed the presence of materials with flash points below 140°F. As a result, these materials are considered to be hazardous based on the RCRA characteristic of ignitability, as defined in 40 CFR 261.21. Drum sample D10 had a flashpoint of less than 74°F. The presence of these materials could result in a fire or explosion if high temperatures are recorded in the buildings during the summer months, or if vandals enter the facility and inadvertently cause a spark.

Appendix C

Personal Communication from D. Blair/Dayton Water Administration to C. Ottinger/E & E START

ecology and environment, inc., telephone log

Contact	Company or Agency
Dan Blair, engineer	Dayton Water Administration
Position	**Contact Phone Number**
	937 443-3739

E & E Employee	Date	Time
Christianne Ottinger	2/10	~1:00 pm

Site Name and Location	Job No./Pan
Dayton Electroplate, Dayton, Montgomery Cty, Ohio	phone 00250

Source of drinking water - city wells
located along Mad + Great Miami Rivers
2 water treatment facilities - 1 along Ottawa St + 1 further N
110 wells send water to plants
water is then combined + sent to Montgmry Cty, serving 440,00
2 wells on S. side of Mad River w/in 2200 ft of site
11 wells w/in 2 mile radius of site
site is located outside of g.w. protection area;
therefore, chemicals stored on site are not restricted
D. Blair believes storm water + runoff is not collected
at the site + migrates toward river

Signature/Date
2/10

Appendix D

Personal Communication from S. Renninger/U.S. EPA to D. Robin/E & E START

ecology and environment, inc.
CHICAGO, ILLINOIS

TELEPHONE LOG

REFERENCE

CONTACT	COMPANY or AGENCY	POSITION
Steve Renninger	U.S. EPA	OSC

CONTACT ADDRESS	CONTACT PHONE NUMBER
	937-223-6768

E&E EMPLOYEE	DATE	TIME
D. Robin	1-17-96	1130.

PROJECT NUMBER	SITE NAME and LOCATION
DAYTON ELECT.	KJ5102.

DISCUSSION

Mr. Renninger explained that U.S. EPA is in the process of removing all containers of hazardous waste from the site; However, he does not currently have plans to sample or remove any soil. He does suspect that soils beneath the building are contaminated with chromium, nickel, cyanide + Acids.

I explained that the S.A. section may be able to work with him on soil sampling.

SIGNATURE Donovan Robin

PAGE 1 OF 1

Appendix E

Stout et. al, 1943, *Geology of Water in Ohio*

Kay

STATE OF OHIO
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGICAL SURVEY
RALPH J. BERNHAGEN, CHIEF

BULLETIN 44

GEOLOGY OF WATER IN OHIO

by

Wilber Stout, Karl Ver Steeg,

and G. F. Lamb

COLUMBUS

1943

Reprinted without revision 1968

LEWISVILLE

Population: 252

Streams: Lewisville lies on a dividing ridge at the level of the Harrisburg peneplain and at an elevation approximating 1,240 feet. The streams heading in the vicinity are Brister Fork to the south, Sunfish Creek to the east, and South Fork to the west.

Glaciation: The area is far out in the unglaciated field.

Floor level: The general relief is from 150 to 200 feet.

Rocks: The rocks at Lewisville are at the horizon of the Washington coal in the Washington formation of the Permian system and offer little as a water resource.

Brines: Deep drilling, more than 250 feet below the valley floors, yields brines.

Present supply: The supply, 1941, is from common wells.

Possibilities: The chief source of a supply is ponded water in one of the streams near by.

SARDIS

Population: 440

Streams: Sardis lies on the terraced flood plain of the Ohio River north of the stream and at an elevation of 631 feet.

Glaciation: The village is placed near the col between the old Steubenville River and Marietta River. Teays Stage, which was cut through during Kansan or post-Kansan glacial time, producing the New Martinsville River flowing northeastward. Sardis is at the head of the "Long Reach" of the Ohio River.

Floor level: The fill in the valley is reported at 60 feet thus placing the rock floor at an elevation of 570 feet.

Rocks: Sardis stands about on the level of the Waynesburg coal at the top of the Monongahela formation of the Pennsylvanian system. The underlying strata offer only meager supplies of rock water.

Brines: Deep drilling, below 200 feet, is prevented by brines.

Present supply: The supply, 1941, is from common wells in the valley fill.

Possibilities: Large volumes of water are available in the fill along the Ohio River.

WOODSFIELD

Population: 2442

Streams:—Woodsfield lies on the crest of the ridge on the level of the Harrisburg peneplain and at an elevation approximating 1,211 feet. The streams heading near the village are mere runs and of no importance. Sunfish Creek, with a headwater basin of some twenty square miles, lies one and three-fourths miles to the north.

Glaciation: The area is far out in the unglaciated part of the State.

Floor level: The elevation of Sunfish Creek is about 600 feet and that of Woodsfield 1,211 feet.

Rocks: Woodsfield rests on rocks of the Greene formation of the Permian system at about the level of the Dunkard coal. The Waynesburg coal is present at an elevation of about 1,000 feet and is overlain by the massive Waynesburg sandstone which should yield small supplies of rock water.

Brines: Deep drilling, 250 feet or more below the valley floors, is prevented by brines.

Present supply: The supply, 1941, is from ponded surface water filtered before use.

Possibilities: Ponded waters from the streams offer the chief supplies.

MONTGOMERY COUNTY

BROOKVILLE

Population: 1,653

Streams: Brookville lies well towards the headwaters of Wolf Creek with only a few square miles of basin above this place.

Glaciation: The area was abraded by both the Illinoian and Wisconsin ice sheets and is covered with some moraine material. The drift is reported from 70 to 80 feet in thickness and is the chief source of water.

Floor level: No deeply-filled valleys are known in the vicinity.

Rocks: The underlying rocks are the basal beds of the Niagara formation, a dolomite with a fair porosity. Usually it contains some water.

Sulphur water: The sweet water table is confined to depths of 200 feet or less; beyond this sulphur water and brines appear.

Present supply: The supply, 1941, is ground water untreated.

Possibilities: The chief possibilities are supplies from the glacial drift and from Wolf Creek direct.

CENTERVILLE

Population: 501

Streams: Centerville lies on the glaciated Lexington peneplain at an elevation of 1,020 feet. It is on the divide between the two Miami Rivers. Sugar Creek heads to the east and south of the village and Holes Creek to the west and north. The immediate streams are all mere runs.

Glaciation: Although affected by both the Illinoian and Wisconsin ice sheets, the drift is thin, averaging less than 25 feet.

Floor level: No buried valleys are known in that area.

Rocks: The chief underlying rock is the Brassfield limestone which may be drawn upon for small supplies only.

Sulphur water: Any deep-seated waters found will be impure from sulphur and saline compounds.

Present supply: The present supply, 1941, is obtained from an old quarry located three-fourths mile northeast of the village. The water is softened by the lime-soda ash process.

Possibilities: Aside from the quarry the other sources for water are meager or poor.

DAYTON

Population: 210,718

Streams: Dayton lies in the valley of the Miami River. Mad River from the northeast joins the Miami in the north part of Dayton. Thus the Miami and Mad rivers are available for a water supply.

Glaciation: The area was abraded by both the Illinoian and Wisconsin ice sheets. Although the uplands contain some thin moraine sheets, the drift in general is thin, not exceeding 30 feet on the average.

Floor levels: One measurement shows 247 feet of fill, thus placing the valley floor at an elevation of 513 feet.

Rocks: The rocks underlying the valley at Dayton belong in the upper portion of the Richmond formation and consist of hard limestones and dense shales with little or no water.

Sulphur water: Any deep-seated water found will be contaminated with sulphur and saline compounds.

Present supply: The public water service was installed in 1869. The first supply was directly from the Mad River but this was abandoned in 1887. In 1900 the supply came from eighty-seven 8-inch wells driven from 30 to 60 feet deep in the bed of the Mad River in the upper part of town. The supply, 1941, is ground water from the same source and treated by the lime-soda ash process.

Possibilities: The possibilities are the deep fill in the Miami and Mad River valleys and from the streams direct.

ENGLEWOOD

Population: 531

Streams: Englewood lies on the glaciated Lexington peneplain at an elevation of 922 feet, on the west bluff of Stillwater River. This is the location of the Englewood dam.

Glaciation: The area was abraded by both the Illinoian and Wisconsin ice sheets. The drift, however, is thin, averaging less than 25 feet.

Floor levels: The buried valley is that of West Milton Creek of Deep Stage age. The fill on Stillwater River is reported to be about 80 feet in thickness. Thus the rock floor stands at about 700 feet, the stream at 780 feet, and the village at 922 feet.

Rocks: The Brassfield limestone is the underlying rock, below which are the hard shales and limestones of the Cincinnati group. The "fire stone" layer of the Brassfield may supply small quantities of water.

Sulphur water: Any deep-seated water found will be impregnated with sulphur and saline compounds.

Present supply: The supply, 1941, is ground water untreated.

Possibilities: Either the fill of the valley or Stillwater River direct offers the only satisfactory supply.

FARMERSVILLE

Population: 404

Streams: Farmersville is located on the glaciated Lexington peneplain at an elevation of 882 feet and west of Little Twin Creek here a stream of small size. Twin Creek draining parts of several townships lies about one and one-fourth miles to the south.

Glaciation: The village lies on the Farmersville moraine of the Wisconsin ice sheet. The drift is thick, 140 to 170 feet or more, and contains considerable sand and gravel for water storage.

Floor level: The rock floor stands at an elevation of about 710 feet, Little Twin Creek at 830 feet, and the village at 882 feet.

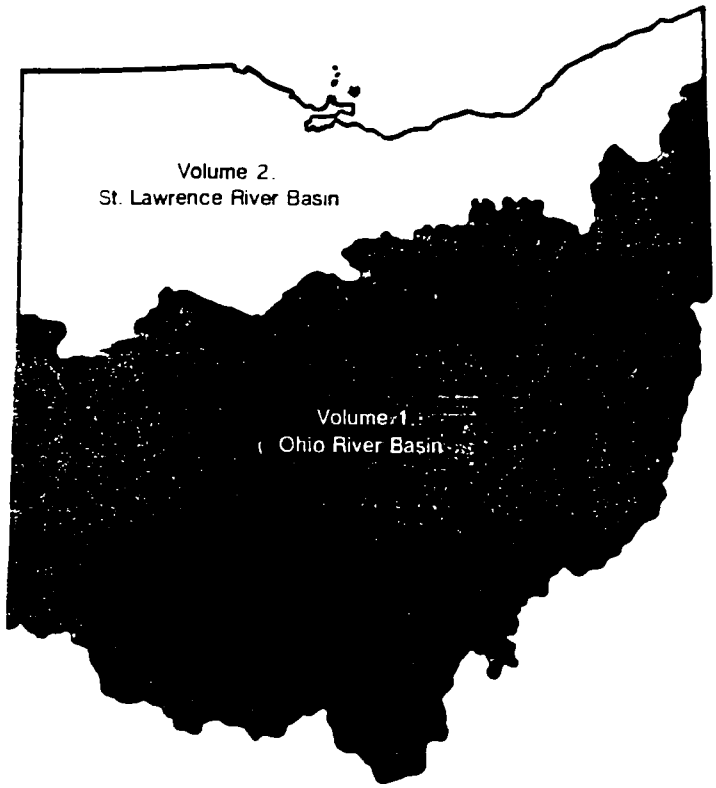
Rocks: The village is underlain by hard limestones and dense shales of the Richmond formation with little or no water.

Appendix F

U.S.G.S., 1996, *Water Resource Data for Ohio, Water Year 1995, Vol. 1.*

Water Resources Data Ohio Water Year 1995

Volume 1. Ohio River Basin Excluding Project Data



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT OH-95-1

Prepared in cooperation with the State of Ohio
and with other agencies

U.S. DEPARTMENT OF THE INTERIOR

BRUCE BABBITT, Secretary

U.S. GEOLOGICAL SURVEY

Gordon P. Eaton, Director

Prepared in cooperation with the
State of Ohio
and with other agencies as listed
under cooperation

For additional information write to
District Chief, Water Resources Division
U.S. Geological Survey
975 West Third Avenue
Columbus OH 43212
1996

03270000 MAD RIVER NEAR DAYTON, OH

LOCATION.--Lat 39°47'50", long 84°05'19", in SW 1/4 sec. 7, R. 8, T.2, Green County, Hydrologic Unit 05080001, on left bank in retarding basin 300 ft upstream from Huffman Dam, 2.3 mi downstream from Mud Run, 6.2 mi northeast of Dayton and at mile 6.1. Water-quality sampling site was on left bank 900 ft downstream.
DRAINAGE AREA.--635 mi².
PERIOD OF RECORD.--October 1914 to current year. Monthly discharge only for some periods, published in WSP 1305.
REVISED RECORDS.--WSP 453: 1915. WSP 743: 1929-32. WSP 1305: 1916(M), 1925(M) 1930-32(M). drainage area. WDR OH-82-1: 1980.
GAGE.--Water-stage recorder. Datum of gage is 777.06 ft above sea level. Jan. 21, 1959 to Dec. 14, 1967, at site 900 ft downstream, at datum 77.01 ft lower. See WSP 1725 for history of changes prior to Jan. 21, 1959. Water-quality data collected at this site 1947-1948, 1962-1963, 1966-1980.
REMARKS.--Records fair. Flood flows affected by backwater from Huffman retarding dam beginning in 1921, some regulation by C. J. Brown Reservoir 26 mi upstream on Buck Creek since 1974. Also see REMARKS for station 03269500.
COOPERATION.--Gage-height tapes and 8 discharge measurements furnished by Miami Conservancy District.
EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,200 ft³/s Jan. 22, 1959 (based on Huffman retarding basin outflow records); maximum gage height, 87.9 ft Feb. 26, 1929 at site and datum then in use; minimum daily discharge, 94 ft³/s Aug. 6, 1934, but may have been less during period 1921-24.
EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of March 25, 1913 reached a stage of 14.0 ft, original site and datum, discharge 75,700 ft³/s, computed by Miami Conservancy District.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1994 TO SEPTEMBER 1995
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	250	282	248	e170	313	678	310	502	871	1610	511	414
2	234	258	223	e160	313	579	311	698	909	980	537	414
3	235	242	212	e150	297	506	294	638	890	779	488	411
4	249	223	205	e150	294	471	318	528	1090	610	444	406
5	291	228	246	e150	277	459	287	501	913	664	1210	402
6	293	290	210	194	e240	468	266	469	818	899	2720	400
7	287	242	217	266	e230	587	271	429	750	703	1270	400
8	267	227	226	183	e230	1970	262	400	723	612	2390	400
9	245	268	362	170	e220	1590	320	682	761	506	5340	400
10	245	339	527	168	e220	1160	327	1340	717	481	2630	394
11	240	231	556	260	e210	1080	576	1850	909	459	1580	381
12	241	212	412	428	e210	955	640	1100	830	442	1450	442
13	237	204	346	400	e200	825	757	861	840	423	1070	485
14	238	196	317	344	e200	725	543	e1600	774	411	866	405
15	239	193	289	397	e280	654	438	1240	635	410	874	375
16	233	254	320	465	717	600	383	908	569	581	789	373
17	231	216	460	420	603	534	358	1360	546	530	769	380
18	231	211	357	374	575	492	361	3130	525	442	715	368
19	262	195	308	385	594	469	348	4500	506	433	849	355
20	253	193	284	691	638	461	313	2460	496	424	812	374
21	243	209	265	891	640	489	2170	1760	519	486	650	363
22	246	193	253	706	559	461	2520	1450	531	452	581	351
23	240	182	243	591	507	449	1360	1210	918	485	542	353
24	235	183	235	559	484	422	1320	842	689	708	526	365
25	245	174	231	496	452	391	1040	1270	555	547	511	365
26	242	168	219	452	413	348	849	1920	503	1320	490	365
27	249	236	217	431	396	349	725	1450	734	2470	474	365
28	256	473	212	411	588	341	627	1530	662	1090	462	361
29	252	276	208	376	---	341	557	1580	742	803	451	358
30	250	259	204	366	---	326	524	1210	1860	668	445	353
31	265	---	180	335	---	314	---	1030	---	593	433	---
TOTAL	7724	7057	8792	11539	10900	19494	19375	40448	22785	22021	32879	11578
MEAN	249	235	284	372	389	629	646	1305	759	710	1061	386
MAX	293	473	556	891	717	1970	2520	4500	1860	2470	5340	485
MIN	231	168	180	150	200	314	262	400	496	410	433	351
CFSM	.39	.37	.45	.59	.61	.99	1.02	2.05	1.20	1.12	1.67	.61
IN.	.45	.41	.52	.68	.64	1.14	1.14	2.37	1.33	1.29	1.93	.68

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1974 - 1995, BY WATER YEAR (WY)

MEAN	437	553	723	742	908	955	928	809	687	627	457	407
MAX	1425	1175	2027	1559	1839	1637	1428	1675	1745	1525	1235	1528
(WY)	1987	1986	1991	1991	1975	1978	1974	1990	1981	1993	1979	1979
MIN	216	235	236	239	287	344	444	268	192	211	172	217
(WY)	1989	1995	1977	1977	1992	1983	1976	1988	1988	1988	1988	1987

SUMMARY STATISTICS	FOR 1994 CALENDAR YEAR		FOR 1995 WATER YEAR		WATER YEARS 1974 - 1995	
ANNUAL TOTAL	187948		214592			
ANNUAL MEAN	515		588		685	
HIGHEST ANNUAL MEAN					945	1980
LOWEST ANNUAL MEAN					336	1988
HIGHEST DAILY MEAN	6130	Jan 28	5340	Aug 9	10300	Feb 24 1975
LOWEST DAILY MEAN	168	Nov 26	150	Jan 3	112	Jul 17 1988
ANNUAL SEVEN-DAY MINIMUM	186	Nov 20	165	Dec 31	124	Jul 11 1988
INSTANTANEOUS PEAK FLOW			5830	Aug 9	11400	Feb 24 1975
INSTANTANEOUS PEAK STAGE			12.27	Aug 9	19.01	Feb 24 1975
INSTANTANEOUS LOW FLOW			150	Jan 3	112	Jul 17 1988
ANNUAL RUNOFF (CFSM)	.81		.93		1.08	
ANNUAL RUNOFF (INCHES)	11.01		12.57		14.66	
10 PERCENT EXCEEDS	883		1120		1270	
50 PERCENT EXCEEDS	346		428		493	
90 PERCENT EXCEEDS	228		218		253	

e Estimated

Appendix G

Personal Communication from K. Waldron/E & E START to C. Ottinger/E & E START

ecology and environment, inc., telephone log

Contact	Company or Agency	
Karen Waldron	E+E, Cleveland	
Position	**Contact Phone Number**	
	216 243 3330	
E & E Employee	**Date**	**Time**
Christianne	2/14	11:30
Site Name and Location		**Job No./Pan** 0050
Dawson Electroplate HRS		6B13CESI

Residences directly across the street are within 500 ft of the site

Approx 8 homes on street

Signature/Date CL 2/14/97

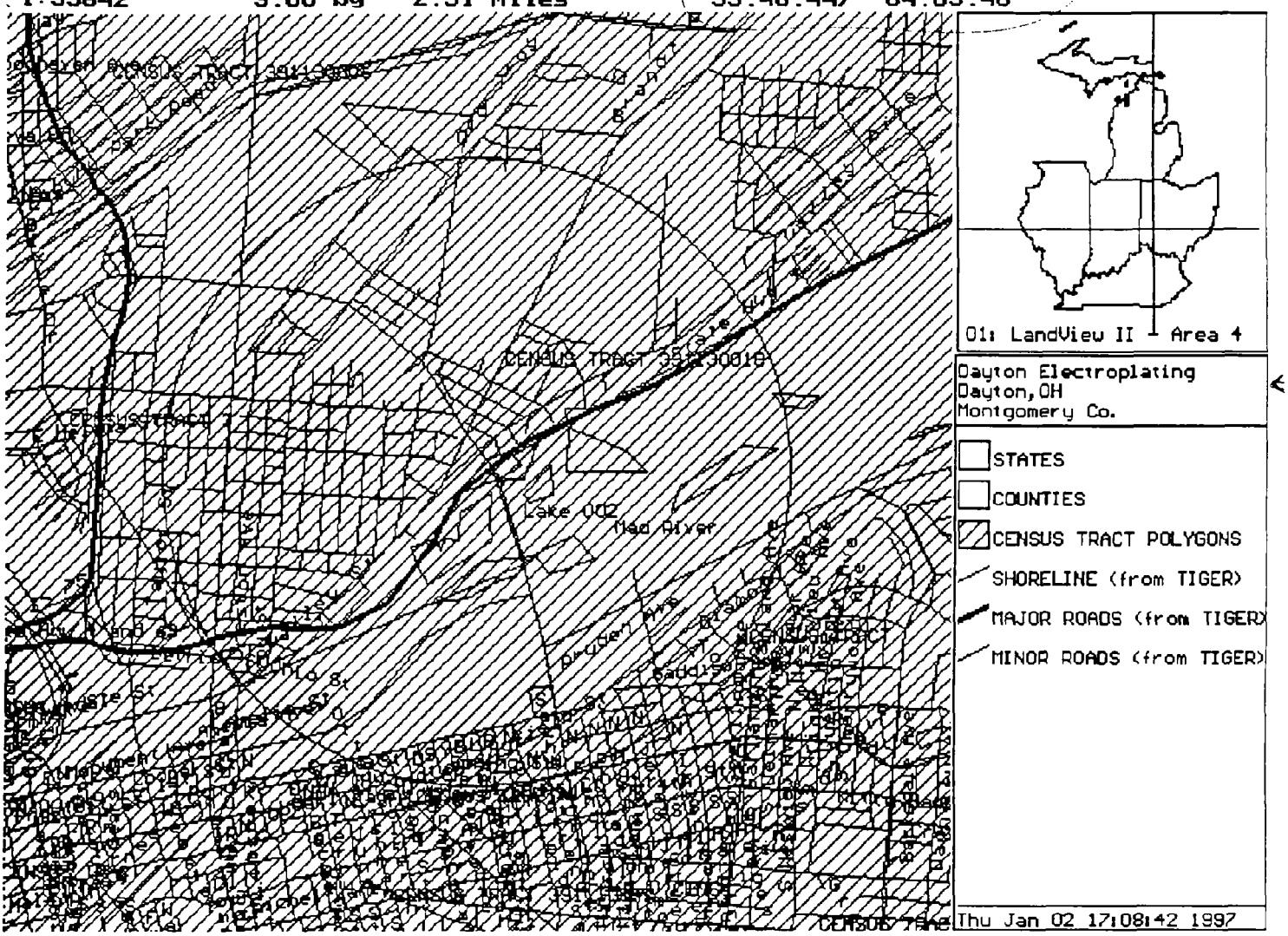
Dayton Electroplating, OH

POPULATION SUMMARY

LOCATION	:	1.0 mi. radius at 39.778931, -84.162852
# BLOCK GROUPS INCLUDED	:	11
NUMBER OF PERSONS	:	9454
NUMBER OF FAMILIES	:	2478
NUMBER OF HOUSEHOLDS	:	3628
MEDIAN (EST.) HOUSEHOLD INCOME	:	16407
AGE 0 THRU 4	:	1016
AGE 5 THRU 9	:	792
AGE 10 THRU 19	:	1314
AGE 20 THRU 49	:	3980
AGE 50 THRU 64	:	1164
AGE 65 AND OVER	:	1188
WHITE	:	8669
BLACK	:	689
INDIAN	:	41
ASIAN	:	43
OTHER RACE	:	12
HISPANIC	:	60
OWNER OCCUPIED	:	1809
RENTER OCCUPIED	:	1819
PERCENT AGE 0 THRU 4	:	10.7
PERCENT AGE 5 THRU 9	:	8.4
PERCENT AGE 10 THRU 19	:	13.9
PERCENT AGE 20 THRU 49	:	42.1
PERCENT AGE 50 THRU 64	:	12.3
PERCENT AGE 65 AND OVER	:	12.6
PERCENT WHITE	:	91.7
PERCENT BLACK	:	7.3
PERCENT INDIAN	:	0.4
PERCENT ASIAN	:	0.5
PERCENT HISPANIC	:	0.6
PERCENT OTHER RACE	:	0.1
PERCENT OWNER OCCUPIED	:	49.9
PERCENT RENTER OCCUPIED	:	50.1

Appendix H

Population Summary from U.S. Department of Commerce, Bureau of the Census, August 1991, *1990 Census of Population and Housing*


1:33642
3.00 by 2.91 miles
39.46.44/- 84.09.46
01: LandView II - Area 4
Dayton Electroplating
Dayton, OH
Montgomery Co.
STATES
COUNTIES
CENSUS TRACT POLYGONS
SHORELINE (from TIGER)
MAJOR ROADS (from TIGER)
MINOR ROADS (from TIGER)
Thu Jan 02 17:08:42 1997
CENSUS TRACT 35
Lake 002
Mad River